COGNITIVE LOAD IN LANGUAGE TESTING: EFFECTS ON LEARNERS' PERFORMANCE AND ACCURACY

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Abstract: *This study, titled "Cognitive Load in Language Testing: Effects on Learners' Performance and Accuracy," examines how cognitive load affects learners' performance and accuracy in language assessment. Cognitive load is the mental pressure that the human mind experiences while processing information, and is particularly important during language tests. The study found that the complexity of test items, time constraints, language level, and task formats can increase or decrease learners' cognitive load. High levels of cognitive load can distract learners and reduce their accuracy, resulting in incomplete knowledge. Conversely, optimal levels of cognitive load can stimulate learners' thinking processes and produce effective results.*

Key words: *Cognitive load, language testing, learners' performance, accuracy, working memory, intrinsic load, extraneous load, germane load.*

Annotatsiya: *"Tilni tekshirishda kognitiv yuk: o'quvchilarning ishlashi va aniqligiga ta'siri" deb nomlangan ushbu tadqiqot kognitiv yukning o'quvchilarning tilni baholashdagi samaradorligi va aniqligiga qanday ta'sir qilishini o'rganadi. Kognitiv yuk - bu ma'lumotni qayta ishlash jarayonida inson ongining boshdan kechiradigan ruhiy bosimi va ayniqsa til testlari paytida muhim ahamiyatga ega. Tadqiqot shuni ko'rsatdiki, test topshiriqlarining murakkabligi, vaqt cheklovlari, til darajasi va topshiriq formatlari o'quvchilarning kognitiv yukini oshirishi yoki*

kamaytirishi mumkin. Kognitiv yukning yuqori darajasi o'quvchilarni chalg'itishi va ularning aniqligini kamaytirishi mumkin, natijada bilim to'liq bo'lmaydi. Aksincha, kognitiv yukning optimal darajalari o'quvchilarning fikrlash jarayonlarini rag'batlantirishi va samarali natijalar berishi mumkin.

Kalit so'zlar: *Kognitiv yuk, til testi, o'quvchilarning ishlashi, aniqlik, ishchi xotira, ichki yuk, tashqi yuk, germane yuk.*

Аннотация: *Данное исследование, озаглавленное «Когнитивная нагрузка при языковом тестировании: влияние на успеваемость и точность учащихся», изучает, как когнитивная нагрузка влияет на успеваемость и точность учащихся при оценке языковых навыков. Когнитивная нагрузка это умственное давление, которое испытывает человеческий разум при обработке информации, и она особенно важна во время языковых тестов. Исследование показало, что сложность тестовых заданий, временные ограничения, уровень владения языком и формат заданий могут увеличивать или уменьшать когнитивную нагрузку учащихся. Высокий уровень когнитивной нагрузки может отвлекать учащихся и снижать их точность, что приводит к неполноте знаний. И наоборот, оптимальный уровень когнитивной нагрузки может стимулировать мыслительные процессы учащихся и приводить к эффективным результатам.*

Ключевые слова: *Когнитивная нагрузка, языковое тестирование, успеваемость учащихся, точность, рабочая память, внутренняя нагрузка, внешняя нагрузка, релевантная нагрузка.*

Introduction

Language is the mostsubtle and vivid expression of human thinking, and the process of studying and evaluating it reveals not only knowledge, but also the internal mechanisms of consciousness. In modern linguistics and pedagogy, the issue of language testing is becoming increasingly important. In particular, in order to fairly and accurately assess students' knowledge, it is necessary to pay attention not only to the result, but also to the factors that influence this result. One of such important factors is cognitive load. The theory of cognitive load emphasizes that the human

mind has limited resources. In the process of language tests, the student performs several tasks at the same time: understanding the text, applying grammatical rules, memorizing new words, and choosing the correct answer. These processes increase his mental load. If this load exceeds the norm, the student's true level of knowledge may not be fully reflected.

Today, many studies show that the complexity of test tasks, time pressure, question structure, and language level directly affect student performance. Therefore, when assessing language, it is necessary to take into account not only the result, but also the cognitive load that the student faces during the test. This approach serves to create a more reliable and fair assessment system [2]. This work studies the impact of cognitive load on student performance and accuracy during language tests. The main goal of the study is to identify cognitive load factors and demonstrate the possibilities of more accurately assessing students' actual language competence by effectively managing them.

The language assessment process is not a simple question-and-answer system, but a multi-layered phenomenon closely related to the complex working processes of the human mind. Cognitive load plays an important role in this process, as it determines how effectively the learner can use knowledge. According to the theory of cognitive load, a person’s working memory is limited, and he can process only a certain amount of information at a time. In the process of language tests, the learner is forced to use these limited resources [3].

Cognitive load is divided into three main types: intrinsic, extraneous, and germane. Intrinsic load depends on the complexity of the task itself, for example, in the process of understanding complex grammatical constructions or using new words in context. If the learner’s language level is low, this load increases even more and he will have difficulty completing the task. Therefore, test tasks should be designed according to the level of students.

External load is associated with the incorrect structure of the task or with unnecessary elements [4]. For example, confusing instructions, unnecessarily long texts, or incomprehensible question formats distract the student from the main task.

As a result, the student spends more effort on understanding the task than on his knowledge. This reduces the reliability of the test results. Therefore, reducing overload is important in creating effective language tests.

Useful load has a positive effect on the student's learning process. This type of load encourages the student to think, analyze, and understand their knowledge more deeply. For example, context-based questions or tasks that are relevant to real-life situations help develop the student's language skills. In this regard, a well-designed test can be not only an assessment tool, but also a learning tool. Time is also a major factor in increasing cognitive load in language tests. Limited time can create stress and pressure on students, slowing down their thinking process or leading to poor decisions [5]. Time pressure is especially severe for students at lower levels, as they need more time to understand each question.

The format of the task also plays an important role. Different formats, such as multiple-choice questions, open-ended questions, sentence completion, or text analysis, have different effects on the student's cognitive load. For example, open-ended questions require more thinking and therefore create a higher level of load. However, they can more accurately reflect the student's actual knowledge.

In addition, the complexity of the lexical and grammatical units used in language tests is also important. If the test material is higher than the student's level, this makes it difficult for him to understand and creates excessive cognitive load. As a result, the student cannot fully demonstrate their knowledge. The impact of cognitive load on student performance is not only related to accuracy, but also to fluency and confidence. Under high load, students make more errors, respond more slowly, and have less confidence. This negatively affects the overall assessment results.

Therefore, the following principles are important in creating modern language tests: making tasks simple and understandable, avoiding redundant information, using materials appropriate to the student's level, and optimally setting the time. These approaches help balance cognitive load and increase the ability to determine the true knowledge of students [6]. Language assessment is not just about

measuring results, but also about understanding the invisible processes taking place in the mind of the learner. Behind each test question lies a delicate balance of thought, memory, attention, and decision-making. It is in these processes that cognitive load manifests its strongest influence.

First, it is necessary to take a closer look at the issue of working memory. Working memory is a system that serves to temporarily store and process information, and its capacity is limited. During language tests, the learner simultaneously reads the text, understands its meaning, performs grammatical analysis, and compares answer options. These processes are interconnected, forming a complex “cognitive chain” in the mind. If this chain becomes too heavy, the learner begins to lose information - like sand slipping through their hands.

Another important aspect of cognitive load is related to automatization. Advanced learners can use many language units automatically, that is, they do not consciously think about grammar [7]. This reduces the load on working memory. On the contrary, beginning learners are forced to consciously remember and apply each rule, as a result of which their cognitive load increases sharply. Therefore, the same test task has different effects on learners of different levels. In addition, the “split attention effect” is also a significant problem. For example, if a learner has to read the text at the same time, look at the questions below, and then compare the options, his focus is divided. This increases cognitive load and increases the likelihood of errors. Therefore, it is very important in test design to concentrate information in one place and reduce unnecessary eye movements.

Another important concept is the “redundancy effect”. Sometimes the same information is repeated in tests in different forms: in the text, in the question, and in the options. Although this seems to help the student, it actually causes overload. Because the mind is forced to process unnecessary information. As a result, it becomes difficult to understand the main content. In language tests, context also directly affects cognitive load. If the task is based on familiar situations close to real life, the student understands it more easily. In this case, his previous knowledge (background knowledge) comes into play and the load is reduced. However, if the

topic is unfamiliar or culturally alien, the student additionally tries to understand the context, which increases the load. Affective factors, that is, emotions, also play an important role. Stress, fear, or lack of confidence reduce the efficiency of working memory. The excitement during the test is sometimes so strong that the student cannot answer even simple questions. This condition is called “test anxiety” and is directly related to cognitive load. Because stress takes up part of the resources of the mind. Metacognition, that is, the ability to control one’s own thought process, is also important in this process. Experienced students manage their strategies: they skip difficult questions, allocate time correctly, and distinguish important information. This helps to effectively manage the load [8]. By developing metacognitive strategies, students’ test results can be significantly improved.

There are several practical approaches to optimizing cognitive load in language test design. For example, "scaffolding" - that is, allowing the student to gradually master complex tasks through step-by-step support. Also, a sequence of questions structured from simple to complex gradually prepares the student's mind. Digital tests also require special attention in terms of cognitive load. Screen design, font size, colors, navigation - all this affects the learner's attention. Poor design can cause overload, while good design, on the contrary, facilitates the learner's work.

Empirical studies show that as cognitive load increases, the number of errors increases, especially grammatical accuracy decreases sharply. In some cases, students, even knowing the correct answer, choose the wrong option due to high load. This casts doubt on the validity of test results. Thus, cognitive load is an invisible force at the heart of the language assessment process. Controlling it is not just a methodological task, but a way to fully reveal the learner's potential. If tests put the mind under excessive pressure, knowledge will be in the shade. But when the load is balanced, knowledge manifests itself in its purest and brightest form like the sun in a clear sky.

Conclusion

The process of language assessment is not just about measuring results, but about understanding the subtle and complex workings of the human mind. This study has shown that cognitive load has a direct impact on students' test scores, accuracy, and overall performance. If the load is too high, the student cannot fully demonstrate their knowledge; if it is balanced, true competence emerges. The interaction of intrinsic, extrinsic, and beneficial cognitive load types determines the effectiveness of language tests. In particular, overload caused by poorly structured tasks reduces the reliability of test results. Therefore, simplicity, accuracy, and relevance to the level of the student should be the main criteria in the test design process. Factors such as time pressure, stress, task formats, and context also affect student performance by increasing or decreasing cognitive load. Developing metacognitive strategies can help students manage this load and improve their performance.

Overall, cognitive load is an important factor that should not be overlooked in language assessment systems. By managing it properly, a morefair, accurate, and effective assessment system can be created. Because true knowledge shines in a balanced mind, not under excessive pressure.

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